to which the colour is due. But bichlorate of potash and bicomenamate of iron likewise exhibit no change of colour on dilution, though such must ensue, if they be converted into neutral salt and free acid. On the other hand, the red potassio-oxalate of chromium varies in intensity of colour on the addition of water, and the different double chlorides of copper undergo the same change as the simple salt. If hydrochlorate of terchloride of gold be added to the terbromide of that metal, a reduction in colour ensues, and an analogous result is obtained when the double sulphate of copper and potash acts on the acetate of copper—facts which point to a decomposition of the double salt in solution. Indeed it is evident that some double salts are resolved more or less into their components by water, while others are not so affected.

The general tendency of my observations has led me to the opinion, that water does not act upon a salt dissolved in it in a manner analogous to that of the hydracids, but I hesitate to draw any conclusion as to the rational constitution of a dissolved salt.

II. "On the Molecular Properties of Antimony." By GEORGE GORE, Esq. Communicated by Dr. TYNDALL, F.R.S. Received December 10, 1857.

(Abstract.)

Antimony may be readily deposited by the electro-process from either of the following liquids :—5 parts of tartar-emetic and 5 parts of tartaric acid dissolved in a mixture of 2 parts of hydrochloric acid and 30 parts of water; or 3 or 4 parts of tartar-emetic dissolved in 1 part of the ordinary chloride of antimony.

The metallic deposits obtained from these two liquids differ greatly in appearance, in structure, and in physical properties : that obtained from the first liquid has a silver-grey colour and frosted surface, is hard in texture, and has a beautiful radiating crystalline structure; whilst that obtained from the second liquid has the colour and appearance of highly polished steel, and has a bright metallic amorphous fracture. The specific gravity of the former is 6·55, whilst that of the latter is 5·78, both being somewhat variable in this respect. The electro-chemical equivalent of the crystalline variety,

after deducting a small portion of gas contained in it, is about 40·2 ; and of the amorphous kind, after deducting a much larger per-centage of gas and of chloride of antimony, which it always contains, the same; but the equivalents actually obtained, including those substances, were 40·7 for the crystalline and 43·3 for the amorphous variety. Amorphous antimony was found to be electro-positive to the crystalline kind, both in acids and alkalies ; it was also thermo-electro-positive to that substance ; and both reduced silver by immersion in a solution of nitrate of silver.

Both these substances when deposited are in unequal states of cohesive tension at their two surfaces, frequently in so great a degree as to rent the metal in all directions. But the most remarkable circumstance, and of which a brief account was published in the Philosophical Magazine, January 1855, is, that amorphous antimony is liable, by percussion or heat, to undergo a rapid and intense molecular change throughout its mass, consisting apparently of a violent commotion amongst its particles, similar, but in a much higher degree, to the changes already observed by other experimentalists in sulphur, selenium, iodide of mercury, &c., and attended by evolution of an extraordinary amount of heat, sufficient, when the substance is massive, to raise its temperature from 60° to upwards of 450° Fahr., melting in several instances bars of tin and other metals.

During the action the chloride of antimony and a portion of the gas are expelled by the heat, and the substance loses its remarkable property. After the action the antimony is found to have undergone no oxidation, but to have considerably altered in its physical characters; it has lost its steel-bright colour and become comparatively grey, and has acquired a dull grey granular fracture ; its specific gravity has also increased, and it has evidently passed a considerable stage towards the condition of the other variety. The grey metal undergoes no such change.

By careful trituration of thin pieces of the amorphous metal under cold water, it has been obtained in the state of a fine powder possessing the same molecular property. The chloride of antimony adheres to the metal with considerable force, and is only partly removed by digesting the powder in dilute hydrochloric acid for a week ; and the gas contained in both varieties is only expelled by pressing them.

III. "Researches on the Structure and Homology of the Reproductive Organs of the Annelids." By THOMAS WILLIAMS, M.D., F.L.S., Physician to the Swansea Infirmary. Communicated by THOMAS BELL, Esq., F.R.S., Pres. L.S. Received October 21, 1857.

The present communication is a revision of a paper by the author, which was read on the 12th of February, 1857, under which date an Abstract is given.

December 17, 1857.

Major-General SABINE, Treasurer and V.P., in the Chair.

The following communications were read:—

I. "Observations on the Poison of the *Upas Antiar*." By Professor ALBERT KÖLLIKER, of Würzburg. Communicated by Sir B. C. BRODIE, Bart. Received December 1, 1857.

During my stay in England, in the autumn of 1857, I was so fortunate as to acquire the rare poison of the famous *Antiaris toxicaria* (Lesch.), with which no experiments have been tried since the time of Magendie, Brodie, Horsfield, and Schnell and Emmert (1809–1815). I owe my specimens of the Antiar poison to my friend Prof. Christison, of Edinburgh, who had it from Borneo, and to Dr. Horsfield, of London, who collected it himself during his stay at Java in the beginning of this century; and as both specimens were fully active—as some preliminary experiments made in company with my friends Dr. Sharpey and Dr. Allen Thomson showed—I thought it well worth while to devote some time to the study of the poison, and to try to elucidate its manner of action on the animal organism. The following are the principal results which I obtained in my experiments with frogs, and I hope that they will not be deemed unworthy of notice by those who take an interest in the physiological action of poisons in general.